WASHING MACHINE

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ABSTRACT

This project is focused on the capability of a microcontroller ATMEGA328P to use serial communication via Bluetooth, with an Android phone, in order to control a washing machine, interrupting its function whenever the door is open and showing the respective cycle in an LCD (Liquid Crystal Display)

PROBLEM STATEMENT OR RESEARCH SUBJECT

Arduino is good enough for student purposes, but in the industry, those tools can't be afforded. The main challenge was to apply the knowledge learnt along the course to combine several functions without interfering with each other.

METHODOLOGY

In order to develop this project, the first step was to define all the characteristics and the way to achieve them. Some of them were how to show the proper cycle in which the washing machine is working on.
Then, a micro-controller was programmed to achieve different purposes with specific functions. All of them using CodeVisionAVR software with C language
Finally, the gear train and the case were manufactured and assembled.

RESULTS AND CONTRIBUTIONS

The project consists in a proper prototype of a washing machine which can be able to connect with an Android device to be controlled wireless. There are three different cycles to show in the LDC: "Cleaning", "Washing" and "Final spin". When the user wants to activate one of them he just need to press the button in the app and the washing machine will do the function automatically showing a countdown as well. Furthermore, if somebody opens the door, a sensor is activated to stop everything as a real machine do it. Thinking in child security.

Each function is programmed in the micro controller. There were used some specific characteristics of ATMega328P. Serial communication, PWM signal supplier, external interruptions and some other interesting ones.

CONCLUSIONS

We can conclude from this project, is that we can use microcontrollers to solve small or large problems, and now we can understand how a washing machine, a blender or a fan works, and we can also improve, change or fix these machines.
This washing machine is only a prototype, but in the future we can work in a company that manufactures washing machines and this project will help us a lot to understand what is the logic of programming the microcontroller inside the washing machine.

REFERENCES

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